

REMARKS

Applicant respectfully requests further examination and reconsideration in view of the above amendments and the comments set forth fully below. Claims 1-44 were pending. Within the Office Action, Claims 1-44 have been rejected. By the above amendments, Claims 20, 27 and 28 have been amended. Accordingly, Claims 1-44 are now pending.

Objections To The Drawings

Within the Office Action, Figure 1 has been objected to because it is stated that Figure 1 should include a designation such as –Prior Art–. By the above amendments, Figure 1 has been amended to include the designation –Prior Art–.

Within the Office Action, the drawings have also been objected to as not showing every feature specified in the claims. Specifically, it is stated within the Office Action that the converter implemented in either a universal plug and play or non-universal plug and play device must be shown or the features canceled from the claims. By the above amendments, Figures 6A and 6B have been added to show the UPnP rendezvous bridge implemented within either a UPnP device (Figure 6A) or a rendezvous device (Figure 6B).

Rejections under 35 U.S.C. § 112, ¶ 2

Within the Office Action, Claim 20 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Specifically, it is stated that in Claim 20 there is no mention of what is being interfaced in the claim for sections a and b. By the above amendments, Claim 20 has been amended to specify a means for interfacing to a universal plug and play type device and a means for interfacing to a rendezvous typ device. Accordingly, Claim 20 is definite and does particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Rejections under 35 U.S.C. § 102(b)

Within the Office Action, Claims 1-18, 20-27, 29-36, 38-43 and 44 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0078161 to Cheng (hereinafter “Cheng”). The Applicant respectfully disagrees with this rejection because Cheng does not teach bridging between a universal plug and play type device and a rendezvous type device.

Cheng is directed to a UPnP enabling device for heterogenous networks of slave devices. Cheng teaches that the bridging device couples an IP (Internet Protocol) network to one or more non-IP networks, in order to facilitate the control of non-UPnP (Universal Plug and Play devices) by a UPnP controller on the IP network. [Cheng, Abstract] Cheng teaches that each of the non-IP networks may employ different technologies, such as USB, Bluetooth, HAVi, Home API, Home RF, X-10 and Jini. [Cheng, Abstract] Cheng further teaches that the bridging device includes enabling logic to support the UPnP addressing, discovery, and description processes for each of the devices on the non-IP network. [Cheng, Abstract] Cheng does not teach communicating with a rendezvous device. Further, Cheng does not teach a bridging device which bridges between a UPnP device and a rendezvous device. As described above, Cheng teaches bridging between an IP network and a non-IP network.

In contrast to the teachings of Cheng, the bridging method and apparatus of the present invention, bridges a UPnP network with a rendezvous network. As taught within the present specification, “[t]he rendezvous protocol utilizes the standard IP networking protocol to enable networking and service discovery.” [Present Specification, page 6, lines 19-20] Accordingly, in contrast to the teachings of Cheng, the UPnP network and the rendezvous network are both considered IP networks. The UPnP rendezvous bridge of the present invention appropriately allows device and service discovery and converts communications directed between devices within the UPnP network and devices within the rendezvous network into an appropriate format for the receiving device, utilizing a UPnP proxy, a rendezvous proxy, a UPnP table and a rendezvous table. [Present Specification, Abstract] As described above, Cheng does not teach communicating with a rendezvous device. As further described above, Cheng does not teach a bridging device which bridges between a UPnP device and a rendezvous device. As described above, Cheng teaches bridging between an IP network and a non-IP network.

Claim 1 is directed to a method of bridging communications between a universal plug and play type device and a rendezvous type device. The method of Claim 1 comprises receiving a communication from the universal plug and play type device for the rendezvous type device, converting the communication into the rendezvous type protocol thereby forming a converted communication and transmitting the converted communication to the rendezvous type device. As described above, Cheng does not teach communicating with a rendezvous type device. As further described above, Cheng does not teach bridging communications between a universal plug and play type device and a rendezvous type device. As described above, Cheng teaches bridging between an IP network and a non-IP network. For at least these reasons, the independent claim 1 is allowable over the teachings of Cheng.

Claims 2-5 are all dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over the teachings of Cheng. Accordingly, Claims 2-5 are all also allowable as being dependent on an allowable base claim.

The independent Claim 6 is directed to a method of bridging communications between a rendezvous type device and a universal plug and play type device. The method of Claim 6 comprises receiving a communication from the rendezvous type device for the universal plug and play type device, converting the communication into the universal plug and play type protocol thereby forming a converted communication and transmitting the converted communication to the universal plug and play type device. As described above, Cheng does not teach communicating with a rendezvous type device. As further described above, Cheng does not teach bridging communications between a rendezvous type device and a universal plug and play type device. As described above, Cheng teaches bridging between an IP network and a non-IP network. For at least these reasons, the independent claim 6 is allowable over the teachings of Cheng.

Claims 7-10 are all dependent on the independent Claim 6. As described above, the independent Claim 6 is allowable over the teachings of Cheng. Accordingly, Claims 7-10 are all also allowable as being dependent on an allowable base claim.

The independent Claim 11 is directed to a converter configured to couple between a universal plug and play type device and a rendezvous type device to convert communications between the universal plug and play type device and the rendezvous type device into proper formats. The converter of Claim 11 comprises a universal plug and play type interface circuit

configured to couple to a universal plug and play type device operating under a universal plug and play type protocol, a rendezvous type interface circuit configured to couple to a rendezvous type device operating under a rendezvous type protocol and a conversion circuit coupled between the universal plug and play type interface circuit and the rendezvous type interface circuit, wherein the conversion circuit converts communications directed from the universal plug and play type device to the rendezvous type device into the rendezvous type protocol, and further wherein the conversion circuit converts communications directed from the rendezvous type device to the universal plug and play type device into the universal plug and play type protocol. As described above, Cheng does not teach communicating with a rendezvous type device. Cheng also does not teach a rendezvous type interface circuit. As further described above, Cheng does not teach a conversion circuit coupled between the universal plug and play type interface circuit and the rendezvous type interface circuit. As described above, Cheng teaches bridging between an IP network and a non-IP network. For at least these reasons, the independent claim 11 is allowable over the teachings of Cheng.

Claims 12-18 are all dependent on the independent Claim 11. As described above, the independent Claim 11 is allowable over the teachings of Cheng. Accordingly, Claims 12-18 are all also allowable as being dependent on an allowable base claim.

The independent Claim 20 is directed to a converter configured for coupling between a universal plug and play type device and a rendezvous type device to convert communications between the universal plug and play type device and the rendezvous type device into proper formats. The converter of Claim 20 comprises means for interfacing to a universal plug and play type device configured for coupling to the universal plug and play type device operating under a universal plug and play type protocol, means for interfacing to a rendezvous type device configured for coupling to the rendezvous type device operating under a rendezvous type protocol and means for converting coupled between the means for interfacing to a universal plug and play type device and the means for interfacing to a rendezvous type device, wherein the means for converting converts communications directed from the universal plug and play type device to the rendezvous type device into the rendezvous type protocol, and further wherein the means for converting converts communications directed from the rendezvous type device to the universal plug and play type device into the universal plug and play type protocol. As described above, Cheng does not teach communicating with a rendezvous type device. Cheng also does

not teach a means for interfacing to a rendezvous type device. As further described above, Cheng does not teach a means for converting coupled between the means for interfacing to a universal plug and play type device and the means for interfacing to a rendezvous type device. As described above, Cheng teaches bridging between an IP network and a non-IP network. For at least these reasons, the independent claim 20 is allowable over the teachings of Cheng.

Claims 21-27 are all dependent on the independent Claim 20. As described above, the independent Claim 20 is allowable over the teachings of Cheng. Accordingly, Claims 21-27 are all also allowable as being dependent on an allowable base claim.

The independent Claim 29 is directed to a bridge device configured for coupling between a universal plug and play type device and a rendezvous type device for converting communications between the universal plug and play type device and the rendezvous type device into proper formats. The bridge device of Claim 29 comprises a universal plug and play type interface circuit configured for coupling to a universal plug and play type device operating under a universal plug and play type protocol, a rendezvous type interface circuit configured for coupling to a rendezvous type device operating under a rendezvous type protocol and a conversion circuit coupled between the universal plug and play type interface circuit and the rendezvous type interface circuit, wherein the conversion circuit converts communications directed from the universal plug and play type device to the rendezvous type device into the rendezvous type protocol, and further wherein the conversion circuit converts communications directed from the rendezvous type device to the universal plug and play type device into the universal plug and play type protocol. As described above, Cheng does not teach communicating with a rendezvous type device. Cheng also does not teach a rendezvous type interface circuit. As further described above, Cheng does not teach a conversion circuit coupled between the universal plug and play type interface circuit and the rendezvous type interface circuit. As described above, Cheng teaches bridging between an IP network and a non-IP network. For at least these reasons, the independent claim 29 is allowable over the teachings of Cheng.

Claims 30-36 are all dependent on the independent Claim 29. As described above, the independent Claim 29 is allowable over the teachings of Cheng. Accordingly, Claims 30-36 are all also allowable as being dependent on an allowable base claim.

The independent Claim 38 is directed to a network of devices, operating under a plurality of protocols. The network of devices of Claim 38 comprises one or more universal plug and play

type devices operating under a universal plug and play type protocol, one or more rendezvous type devices operating under a rendezvous type protocol and a converter coupled to the universal plug and play type devices and the rendezvous type devices for converting communications between the universal plug and play type devices and the rendezvous type devices into proper formats. The converter comprises a universal plug and play type interface circuit coupled to the universal plug and play type devices, a rendezvous type interface circuit coupled to the rendezvous type devices and a conversion circuit coupled to universal plug and play type interface circuit and the rendezvous type interface circuit, wherein the conversion circuit converts communications directed from the universal plug and play type devices to the rendezvous type devices into the rendezvous type protocol, and further wherein the conversion circuit converts communications directed from the rendezvous type devices to the universal plug and play type devices into the universal plug and play type protocol. As described above, Cheng does not teach communicating with a rendezvous type device. Cheng also does not teach a rendezvous type interface circuit. As further described above, Cheng does not teach a conversion circuit coupled between the universal plug and play type interface circuit and the rendezvous type interface circuit. As described above, Cheng teaches bridging between an IP network and a non-IP network. For at least these reasons, the independent claim 38 is allowable over the teachings of Cheng.

Claims 39-44 are all dependent on the independent Claim 38. As described above, the independent Claim 38 is allowable over the teachings of Cheng. Accordingly, Claims 39-44 are all also allowable as being dependent on an allowable base claim.

Rejections under 35 U.S.C. § 103(a)

Within the Office Action, Claims 19, 28, 37 and 44 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cheng in view of U.S. Patent Application Publication No. 2003/0016682 to Cho.

Claim 19 is dependent on the independent Claim 11. Claim 28 is dependent on the independent Claim 20. Claim 37 is dependent on the independent Claim 29. Claim 44 is dependent on the independent Claim 38. As described above, the independent Claims 11, 20, 29 and 38 are all allowable over the teachings of Cheng. Accordingly, Claims 19, 28, 37 and 44 are all also allowable as being dependent on an allowable base claim.

For the reasons given above, the Applicants respectfully submit that the pending claims are in condition for allowance, and allowance at an early date would be appreciated. If the Examiner has any questions or comments, the Examiner is encouraged to call the undersigned at (408) 530-9700 so that any outstanding issues can be quickly and efficiently resolved.

Respectfully submitted,
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